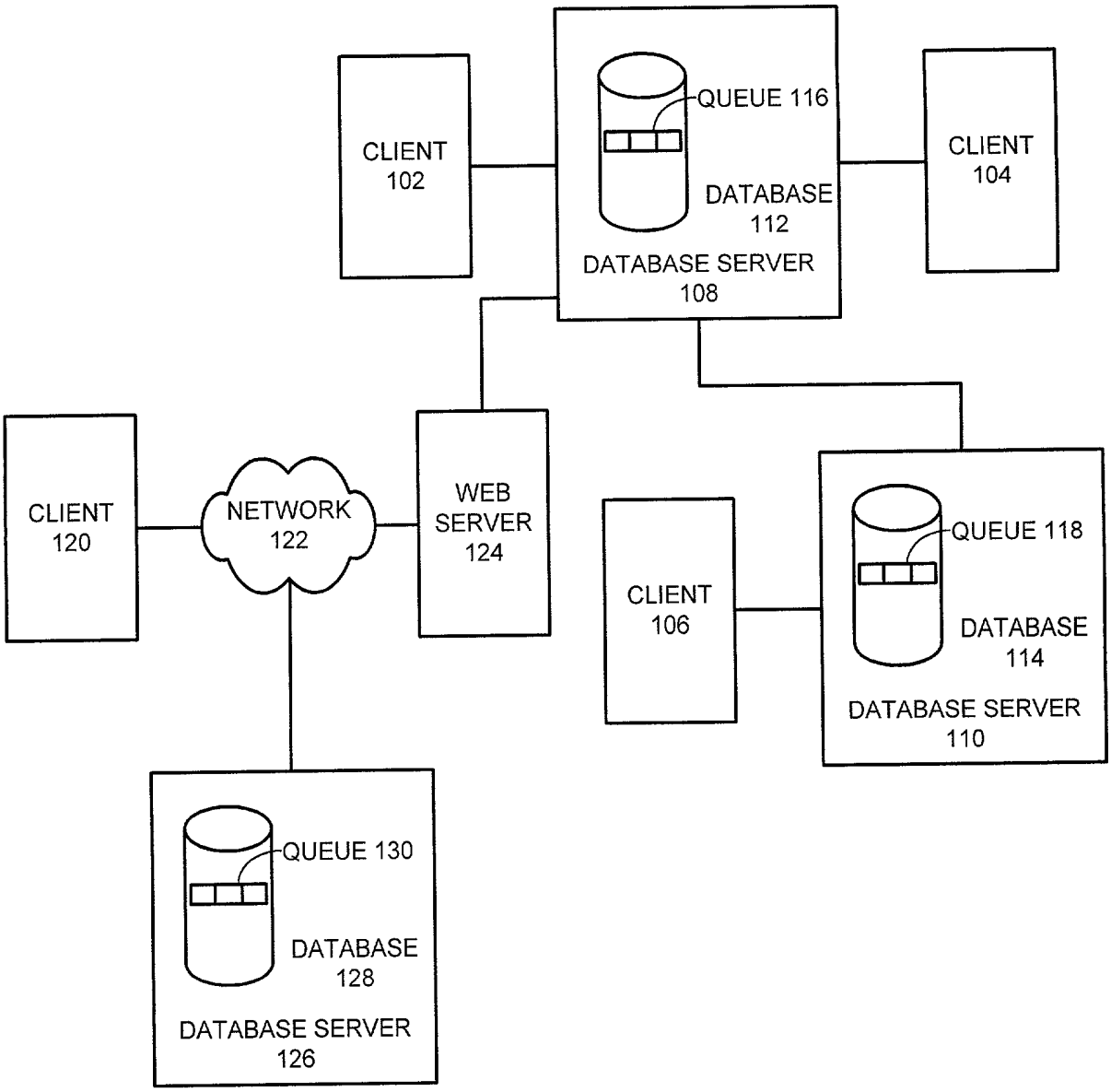
CLIENT
102
QUEUE 116
DATABASE
112
DATABASE SERVER
108
CLIENT
104
CLIENT
120
NETWORK
122
WEB
SERVER
124
CLIENT
106
QUEUE 118
DATABASE
114
DATABASE SERVER
110
QUEUE 130
DATABASE
128
DATABASE SERVER
126

FIG. 1

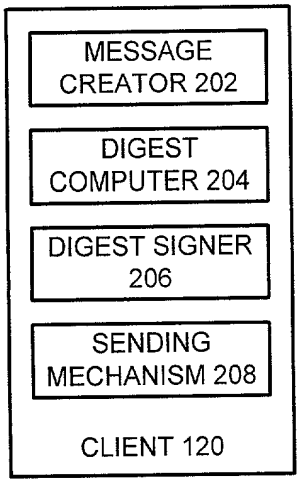

FIG. 2

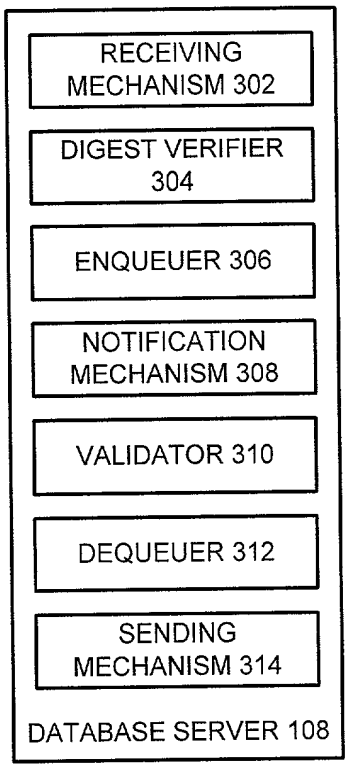

FIG. 3

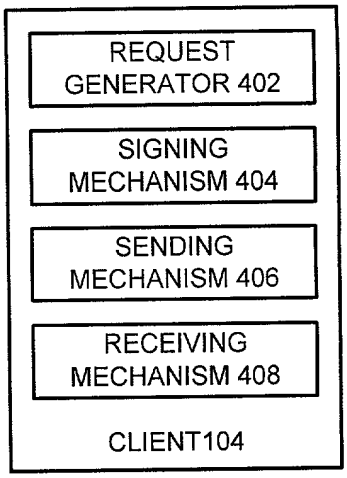

FIG. 4

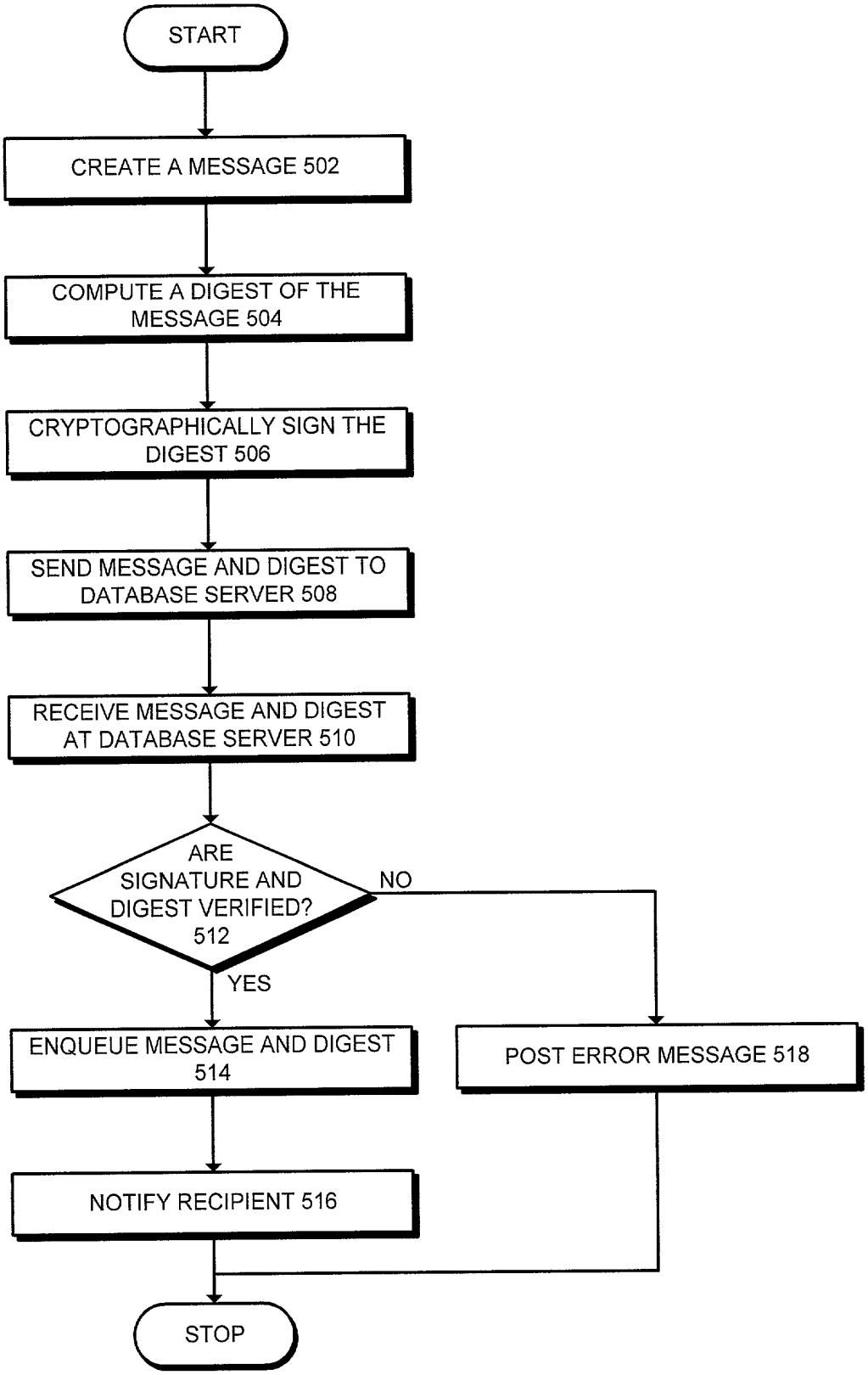
START
CREATE A MESSAGE 502
COMPUTE A DIGEST OF THE MESSAGE 504
CRYPTOGRAPHICALLY SIGN THE DIGEST 506
SEND MESSAGE AND DIGEST TO DATABASE SERVER 508
RECEIVE MESSAGE AND DIGEST AT DATABASE SERVER 510
ARE SIGNATURE AND DIGEST VERIFIED? 512
NO
YES
ENQUEUE MESSAGE AND DIGEST 514
POST ERROR MESSAGE 518
NOTIFY RECIPIENT 516
STOP

FIG. 5

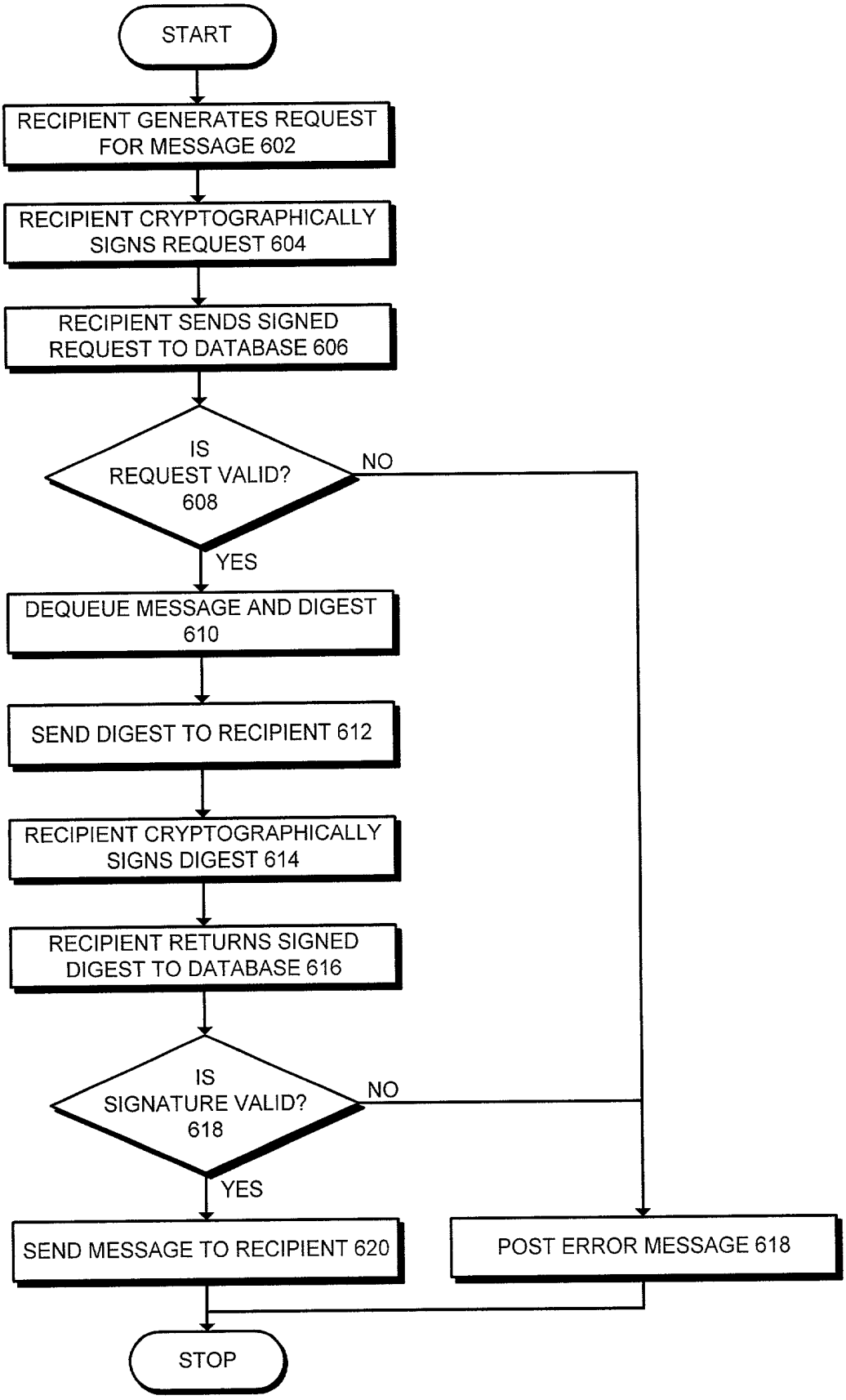
START
RECIPIENT GENERATES REQUEST FOR MESSAGE 602
RECIPIENT CRYPTOGRAPHICALLY SIGNS REQUEST 604
RECIPIENT SENDS SIGNED REQUEST TO DATABASE 606
IS REQUEST VALID? 608
NO
YES
DEQUEUE MESSAGE AND DIGEST 610
SEND DIGEST TO RECIPIENT 612
RECIPIENT CRYPTOGRAPHICALLY SIGNS DIGEST 614
RECIPIENT RETURNS SIGNED DIGEST TO DATABASE 616
IS SIGNATURE VALID? 618
NO
YES
SEND MESSAGE TO RECIPIENT 620
POST ERROR MESSAGE 618
STOP

FIG. 6